

WHAT IS CLAIMED IS:

1. A receiver for down-conversion of a dual band which converts a radio frequency (RF) signal of a first or second
5 band into a desired intermediate frequency (IF) signal, said second band being lower than said first band, said receiver comprising:

first amplification means for amplifying said first-band RF signal;

10 second amplification means for amplifying said second-band RF signal;

a first filter connected to output terminals of said first and second amplification means, said first filter removing image frequency components from output signals from
15 said first and second amplification means;

a voltage controlled oscillator (VCO) for outputting a desired oscillating frequency for the conversion of said first-band RF signal into said IF signal;

20 a divider for dividing said desired oscillating frequency in a predetermined ratio to output a frequency for the conversion of said second-band RF signal into said IF signal;

a mixer connected to output terminals of said first filter, VCO and divider, said mixer mixing said first-band RF signal with an output signal from said VCO or said second-band
25 RF signal with an output signal from said divider to output

said IF signal; and

switching means for, when said first-band RF signal is processed, enabling said first amplification means and transferring the output signal from said VCO directly to said mixer, and, when said second-band RF signal is processed, enabling said second amplification means and transferring the output signal from said VCO to said mixer via said divider.

2. The receiver as set forth in claim 1, further comprising a phase locked loop (PLL)/I2C for controlling said switching means.

3. The receiver as set forth in claim 2, wherein said PLL/I2C has channel information and serves to control said VCO and said first filter using the same control voltage.

4. The receiver as set forth in claim 1, further comprising a second filter for channel selection formed on an integrated circuit (IC) chip in such a manner that it is connected between an output terminal of said mixer and an output terminal of said receiver.

5. A receiver for down-conversion of a dual band which converts an RF signal of a first or second band into a desired IF signal, said second band being lower than said first band,

said receiver comprising:

first amplification means for amplifying said first-band RF signal;

5 a first filter connected to an output terminal of said first amplification means, said first filter removing image frequency components from an output signal from said first amplification means;

10 a VCO for outputting a desired oscillating frequency for the conversion of said first-band RF signal into said IF signal;

a first mixer connected to output terminals of said first filter and VCO, said first mixer mixing an output signal from said first filter with an output signal from said VCO to output said second-band RF signal;

15 second amplification means for amplifying said second-band RF signal;

20 a second filter connected to output terminals of said first mixer and second amplification means, said second filter removing image frequency components from output signals from said first mixer and second amplification means;

a divider for dividing said desired oscillating frequency in a predetermined ratio to output a frequency for the conversion of said second-band RF signal into said IF signal;

25 a second mixer connected to output terminals of said second filter and divider, said second mixer mixing an output

signal from said second filter with an output signal from said divider to output said IF signal; and

switching means for, when said first-band RF signal is processed, enabling said first amplification means and transferring the output signal from said VCO directly to said first mixer, and, when said second-band RF signal is processed, enabling said second amplification means and transferring the output signal from said VCO to said second mixer via said divider.

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6. The receiver as set forth in claim 5, further comprising a PLL/I2C for controlling said switching means.

7. The receiver as set forth in claim 6, wherein said PLL/I2C has channel information and serves to control said VCO, said first filter and said second filter using the same control voltage.

8. The receiver as set forth in claim 5, further comprising a third filter for channel selection formed on an IC chip in such a manner that it is connected between an output terminal of said second mixer and an output terminal of said receiver.